

# School of Public Health

## Syllabus and Course Information



UNIVERSITY OF MINNESOTA  
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**PubH 6341-Section 2**  
**Epidemiologic Methods I**  
**Fall 2015**

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**Credits:** 3  
**Meeting Days:** Tuesday and Thursday  
**Meeting Time:** 4:15 - 5:30pm  
**Meeting Place:** 5-125 Moos Tower

**Instructor:** Shalini Kulasingam, PhD, Associate Professor  
**Office Address:** West Bank Office Building (WBOB)  
Division of Epidemiology and Community Health  
School of Public Health  
1300 S. 2<sup>nd</sup> St. Suite 300  
Minneapolis, MN 55454

**Office Phone:** 612-624-7554  
**Fax:** 612-624-0315  
**E-mail:** kulas016@umn.edu  
**Office Hours:** I will hold regular office hours on Tuesdays from 3 to 4pm in Moos 2-116. Additional office hours, held in my office at WBOB, are also available by appointment

**Teaching Assistants:** Kara Gavin, MPH

**Email:** gavi0093@umn.edu

**Office Hours:** Mondays, 2:30 to 3:30pm in the SPHere

**Luke Smith, MTE**

**Email:** smit8045@umn.edu

**Office Hours:** Wednesdays 10-11 am in the SPHere

**NOTE:** If you do not have SPHere card-key access (i.e. you are not a School of Public Health student), you will need to inform the TA ahead of time to let you in.

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## **I. Course Description**

Epidemiologic Methods I focuses on research methodology. The course introduces study designs applied to human populations, including randomized trials and four types of observational studies (cohort, case-control, cross-sectional, ecological). Because cause-and-effect relations are at the heart of epidemiologic research, numerous related topics are introduced in Epidemiologic Methods I including causal inference, bias, and effect modification.

### **Acknowledgments**

The contents of PubH 6341 have been developed with the contributions of numerous instructors. Drs. Pamela Lutsey, Susan Mason and Shalini Kulasingam currently teach this course, and have been involved with the majority of recent content and modifications. Former faculty/instructors, including Drs. Bernard Harlow, Logan Spector, and Andrew Flood all had roles in either the conceptual development or actual content of the current course, and are acknowledged for their contributions,

## **II. Course Prerequisites**

Epidemiologic Methods I is a 3-credit, graduate level course. It is the first of a three-semester sequence for graduate-level students who intend to major in epidemiology.

## **III. Course Goals and Objectives**

By the end of the course, students will be able to: 1) design basic epidemiologic studies; 2) analyze epidemiologic data using tabular methods; and 3) critically review epidemiologic papers.

## **IV. Methods of Instruction and Work Expectations**

Most of the instruction will be through lectures. Please feel free to raise your hand to ask questions during lectures if you need help understanding an unclear point.

Some class time will be devoted to in-class exercises. Students are expected to come to class having read the assigned readings and reviewed the notes for the class. Students are expected to turn in assignments on time and take tests at the scheduled times. Exceptions to deadlines will be made for extreme situations (i.e., medical or family emergencies) on a case-by-case basis.

## **V. Course Text and Readings**

There is one required text for this course:

Essentials Of Epidemiology In Public Health. Ann Aschengrau and George R. Seage. 3<sup>rd</sup> Edition. Published by Jones and Bartlett (<http://www.jbpub.com>). Copyright 2013

## VI. Course Outline/Weekly Schedule

<p><b>Tuesday, September 8, 2015</b> Class 1 / Overview; History of Epidemiology <u>Required reading:</u> Chapter 1 <b>Assigned: Sources of Epidemiologic data; Student Questionnaire</b></p>
<p><b>Thursday, September 10, 2015</b> Class 2 / Descriptive Epidemiology &amp; Sources of Epidemiologic Data <u>Required reading:</u> Chapter 4 &amp; 5 <b>*Due today: Student Questionnaire</b> <b>Assigned: Review “Math Terminology Refresher”</b></p>
<p><b>Tuesday, September 15, 2015</b> Class 3 / Prevalence and Incidence <u>Required reading:</u> Chapter 2 <b>Assigned: Homework #1</b> <b>*Due today: Sources of Epidemiologic data; Math Terminology Refresher</b></p>
<p><b>Thursday, September 17, 2015</b> Class 4 / Overview of Study Design <u>Required reading:</u> Chapter 6</p>
<p><b>Tuesday, September 22, 2015</b> Class 5 / Measures of Disease Association <u>Required reading:</u> None <b>*Due today: Homework #1</b></p>
<p><b>Thursday, September 24, 2015</b> Class 6 / Measures of Disease Impact <u>Required reading:</u> Chapter 3 (pp 59-70) <b>Assigned: Homework #2</b></p>
<p><b>Tuesday, September 29, 2015</b> Class 7 / Measures of Disease - Synthesis <u>Required reading:</u> None <b>Available today: Practice exam #1</b></p>
<p><b>Thursday, October 1, 2015</b> Class 8 / Causation <u>Required reading:</u> Chapter <b>Due today: Homework #2</b></p>

<p><b>Tuesday, October 6, 2015</b>  <b>Class 9 / EXAM I</b></p>
<p><b>Thursday, October 8, 2015</b>  Class 10 / Experimental Studies – Part I  <u>Required reading:</u> Chapter 7</p>
<p><b>Tuesday, October 13, 2015</b>  Class 11 / Experimental Studies - Part II  <u>Required reading:</u> None  <b>Assigned: Homework #3</b></p>
<p><b>Thursday, October 15, 2015</b>  Class 12 / Experimental Studies – Guest Lecturer  Instructor: Dr. Nancy Sherwood  <u>Required reading:</u> Sherwood et al. NET-Works: Linking families, communities and primary care to prevent obesity in preschool-age children. Contemporary Clinical Trials. 2013;36:544–554  <b>*Due today: Guest Lecture Question</b></p>
<p><b>Tuesday, October 20, 2015</b>  Class 13 / Cohort Studies – Part I  <u>Required reading:</u> Chapter 8  <b>*Due today: Homework #3</b></p>
<p><b>Thursday, October 22, 2015</b>  Class 14 / Cohort Studies – Guest Lecture  Instructor: Dr. Kristin Anderson  <u>Required reading:</u> To Be Assigned  <b>*Due today: Guest Lecture Question</b></p>
<p><b>Tuesday, October 27, 2015</b>  Class 15 / Cohort Studies – Part II  Instructor: Dr. Pam Lutsey  <u>Required reading:</u> <b>None</b></p>
<p><b>Thursday, October 29, 2015</b>  Class 16 / Case-Control Studies – Part I  <u>Required reading:</u> Chapter 9</p>

**Tuesday, November 3, 2015**

Class 17 / Case-Control Studies – Part II

Required reading: None

**Assigned: Homework #4**

**Thursday, November 5, 2015**

Class 18 / Case-Control Studies – Guest Lecturer

**Instructor: Dr. Alvaro Alonzo**

Required reading: Alzono et al. Gout and risk of Parkinson Disease. Neurology; 2007;69:1696–1700

**\*Due today: Guest Lecture question**

**Available today: Practice exam #2**

**Tuesday, November 10, 2015**

Class 19 / Cross-Sectional and Ecologic Studies

Required reading: None

**\*Due today: Homework #4**

**Thursday, November 12, 2015**

**Class 20 / EXAM 2**

**Tuesday, November 17, 2015**

Class 21 / Systematic Error – Selection Bias

Required reading: Chapter 10 (pp 265-275)

**Thursday, November 19, 2015**

Class 22 / Systematic Error – Information Bias

**Instructor: Dr. Mason**

Required reading: Chapter 10 (pp 276-292)

**Assigned: Homework #5**

**Tuesday, November 24, 2015**

Class 23 / Systematic Error - Validity and Reliability

Required reading: Chapter 16

**Thursday, November 26, 2015**

**No Class! Happy Thanksgiving!**

<p><b>Tuesday, December 1, 2015</b></p> <p>Class 24 / Systematic Error - Confounding</p> <p>Required reading: Chapter 11</p> <p><b>*Due today: Homework #5</b></p> <p><b>Assigned: Homework #6</b></p>
<p><b>Thursday, December 3, 2015</b></p> <p>Class 25 / Standardization</p> <p>Required reading: Chapter 3: pp 71-74</p>
<p><b>Tuesday, December 8, 2015</b></p> <p><b>Class 26 / Effect Measure Modification</b></p> <p>Required reading: Chapter 13</p> <p><b>*Due today: Homework #6</b></p> <p><b>Available today: Practice final exam</b></p>
<p><b>Thursday, December 10, 2015</b></p> <p><b>Class 27 / Outbreak Investigation - Guest Lecture</b></p> <p><b>Instructor: Dr. Kirk Smith</b></p> <p><b>Required reading: Kemble et al. Clinical Infectious Diseases. 2013;57:648-654.</b></p> <p><b>*Due today: Guest Lecture Question</b></p>
<p><b>Tuesday, December 15, 2015</b></p> <p><b>Class 28 / The "Big Picture"</b></p> <p><b>Required reading: Chapter 14 (pp 363-374)</b></p>
<p><b>Thursday, December 17th, 2015</b></p> <p><b>FINAL EXAM: 4:15 to 6:15pm (Location TBD)</b></p>

*\*Assignments must be submitted before the beginning of class on the day they are due*

## VII. Evaluation and Grading

Epidemiology majors must take this course A/F; others may choose to take the course S/N, but should consult the graduate studies coordinator in their department. Students may change grading options during the initial registration period or during the first two weeks of the semester. **The grading option may not be changed after the second week of the term.** A grade of C- or higher must be obtained in order to receive an S under the S/N system.

A minimum grade of B- must be earned in order to enroll in Epidemiologic Methods II (PubH 6342). Epidemiology majors must earn a minimum grade of B- in Epidemiologic Methods I and other core courses (PubH 6342, 6343, 6344, 6450 and 6452) in order to graduate.

Extensive efforts are made to ensure that the homework and exams are graded consistently. If after reviewing your graded homework or exam you are dissatisfied with the grading, in order to request a grade change, you must submit the paper copy together with a written statement of why you think the homework or exam question should have been graded differently. Please be aware that if you submit such a request, your entire homework or exam may be reviewed and re-graded either up or down.

### **Grading Basis:**

- Homework (15%): 6 homework assignments (2.5 pts each)
- Guest Lecture Questions (2%): 1 question for each of 4 guest lectures (0.5 pt each)
- Sources of Epidemiologic Data Exercise (1%): 1 point
- Exam 1 (23%): First third of the course
- Exam 2 (26%): Cumulative with emphasis on material covered in middle third
- Exam 3 (33%): Cumulative with an emphasis on material covered in final third

### **Final grades will be assigned as follows:**

100.0 - 92.5	A
90.0 - 92.4	A-
87.5 - 89.9	B+
82.5 - 87.4	B
80.0 - 82.4	B-
77.5 - 79.9	C+
72.5 - 77.4	C
70.0 - 72.4	C-
67.5 - 69.9	D+
62.5 - 67.4	D
60.0 - 62.4	D-
< 60	F

Students are expected to turn in assignments on time and take tests at the scheduled times. Exceptions to deadlines will be made for extreme situations (i.e., medical or family emergencies) on a case-by-case basis.

A 4.000 - Represents achievement that is outstanding relative to the level necessary to meet course requirements

A- 3.667

B+ 3.333

B 3.000 - Represents achievement that is significantly above the level necessary to meet course requirements

B- 2.667

C+ 2.333

C 2.000 - Represents achievement that meets the course requirements in every respect

C- 1.667

D+ 1.333

D 1.000 - Represents achievement that is worthy of credit even though it fails to meet fully the course requirements

S - Represents achievement that is satisfactory, which is equivalent to a C- or better.

### **Course Evaluation**

The SPH will collect student course evaluations electronically using a software system called CourseEval: [www.sph.umn.edu/courseval](http://www.sph.umn.edu/courseval). The system will send email notifications to students when they can access and complete their course evaluations. Students who complete their course evaluations promptly will be able to access their final grades just as soon as the faculty member renders the grade in SPHGrades: [www.sph.umn.edu/grades](http://www.sph.umn.edu/grades). All students will have access to their final grades through OneStop two weeks after the last day of the semester regardless of whether they completed their course evaluation or not. Student feedback on course content and faculty teaching skills are an important means for improving our work. Please take the time to complete a course evaluation for each of the courses for which you are registered.

### **Incomplete Contracts**

A grade of incomplete "I" shall be assigned at the discretion of the instructor when, due to extraordinary circumstances (e.g., documented illness or hospitalization, death in family, etc.), the student was prevented from completing the work of the course on time. The assignment of an "I" requires that a contract be initiated and completed by the student before the last official day of class, and signed by both the student and instructor. If an incomplete is deemed appropriate by the instructor, the student in consultation with the instructor, will specify the time and manner in which the student will complete course requirements. Extension for completion of the work will not exceed one year (or earlier if designated by the student's college). For more information and to initiate an incomplete contract, students should go to SPHGrades at: [www.sph.umn.edu/grades](http://www.sph.umn.edu/grades).

**University of Minnesota Uniform Grading and Transcript Policy** - A link to the policy can be found at [onestop.umn.edu](http://onestop.umn.edu).

## VIII. Other Course Information and Policies

### **Grade Option Change** (if applicable)

For full-semester courses, students may change their grade option, if applicable, through the second week of the semester. Grade option change deadlines for other terms (i.e. summer and half-semester courses) can be found at [onestop.umn.edu](http://onestop.umn.edu).

### **Course Withdrawal**

Students should refer to the Refund and Drop/Add Deadlines for the particular term at [onestop.umn.edu](http://onestop.umn.edu) for information and deadlines for withdrawing from a course. As a courtesy, students should notify their instructor and, if applicable, advisor of their intent to withdraw.

Students wishing to withdraw from a course after the noted final deadline for a particular term must contact the School of Public Health Office of Admissions and Student Resources at [sph-ssc@umn.edu](mailto:sph-ssc@umn.edu) for further information.

### **Student Conduct Code**

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected adhere to Board of Regents Policy: *Student Conduct Code*. To review the Student Conduct Code, please see: [http://regents.umn.edu/sites/default/files/policies/Student\\_Conduct\\_Code.pdf](http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf).

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

### **Use of Personal Electronic Devices in the Classroom**

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how personal electronic devices are allowed to be used in the classroom. For complete information, please reference: <http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html>.

### **Scholastic Dishonesty**

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: [http://regents.umn.edu/sites/default/files/policies/Student\\_Conduct\\_Code.pdf](http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf)) If it is determined that a student has cheated, he or she may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: <http://policy.umn.edu/Policies/Education/Education/INSTRUCTORRESP.html>.

The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: <http://www1.umn.edu/oscai/integrity/student/index.html>. If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class-e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

### **Makeup Work for Legitimate Absences**

Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see: <http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html>.

### **Appropriate Student Use of Class Notes and Course Materials**

Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: <http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html>.

### **Sexual Harassment**

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy:

<http://regents.umn.edu/sites/default/files/policies/SexHarassment.pdf>

### **Equity, Diversity, Equal Opportunity, and Affirmative Action**

The University will provide equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy:

[http://regents.umn.edu/sites/default/files/policies/Equity\\_Diversity\\_EO\\_AA.pdf](http://regents.umn.edu/sites/default/files/policies/Equity_Diversity_EO_AA.pdf).

### **Disability Accommodations**

The University of Minnesota is committed to providing equitable access to learning opportunities for all students. Disability Services (DS) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact DS at 612-626-1333 to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with DS and have a current letter requesting reasonable accommodations, please contact your instructor as early in the semester as possible to discuss how the accommodations will be applied in the course.

For more information, please see the DS website, <https://diversity.umn.edu/disability/>.

### **Mental Health and Stress Management**

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: <http://www.mentalhealth.umn.edu>.

### **The Office of Student Affairs at the University of Minnesota**

The Office for Student Affairs provides services, programs, and facilities that advance student success, inspire students to make life-long positive contributions to society, promote an inclusive environment, and enrich the University of Minnesota community.

Units within the Office for Student Affairs include, the Aurora Center for Advocacy & Education, Boynton Health Service, Central Career Initiatives (CCE, CDes, CFANS), Leadership Education and Development –Undergraduate Programs (LEAD-UP), the Office for Fraternity and Sorority Life, the Office for Student Conduct and Academic Integrity, the Office for Student Engagement, the Parent Program, Recreational Sports, Student and Community Relations, the Student Conflict Resolution Center, the Student Parent HELP Center, Student Unions & Activities, University Counseling & Consulting Services, and University Student Legal Service.

For more information, please see the Office of Student Affairs at <http://www.osa.umn.edu/index.html>.

### **Academic Freedom and Responsibility: for courses that do not involve students in research**

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled\*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

\* Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".